

**City of Detroit**  
**Water and Sewerage Department**  
**Laboratory Analysis of Water Samples Collected at**  
**Southwest Plant**  
**September 16, 2004**

Parameter	Formula	Units	Raw	Tap	MCL	Sec.Std	MDL
Turbidity		NTU	4.00	0.10	0.3/95% (1)		
Total Solids		mg/l	157	159		500	10
Total Dissolved Solids		mg/l	119	130		500	10
Aluminum	Al	mg/l	0.119	0.096		0.05-0.2	0.005
Iron	Fe	mg/l	0.181	0.036		0.3	0.002
Copper	Cu	mg/l	<0.002	<0.002	1.3		0.001
Magnesium	Mg	mg/l	5.00	4.97			0.2
Calcium	Ca	mg/l	20.3	17.5			0.06
Sodium	Na	mg/l	4.38	4.54		20 (2)	0.01
Potassium	K	mg/l	1.02	0.97			0.01
Manganese	Mn	mg/l	0.005	<0.001		0.05	0.001
Zinc	Zn	mg/l	<0.01	<0.01		5	0.01
Silica	SiO <sub>2</sub>	mg/l	9.21	14.00			0.4
Sulfate	SO <sub>4</sub>	mg/l	7.9	29.6			
Chloride	Cl <sup>-</sup>	mg/l	8.9	9.7		250	1
Phosphorus	P	mg/l	<0.01	0.29			0.01
Free Carbon Dioxide	CO <sub>2</sub>	mg/l	0.8	4.3			
Total Hardness (3), (4), (5)		mg/l	102	106			
Total Alkalinity (3)		mg/l	79	72			
Carbonate Alkalinity (3)		mg/l	0	0			
Bi-Carbonate Alkalinity (3)		mg/l	79	72			
Non-Carbonate Hardness (3)		mg/l	23	34			
Chemical Oxygen Demand		mg/l	<2.0	<2.0			2
Dissolved Oxygen		mg/l	8.9	0.0			
Ammonia Nitrogen	NH <sub>3</sub> -N	mg/l	<0.10	<0.10			0.1
Organic Nitrogen		mg/l	0.1	0.1			0.1
Nitrite Nitrogen	NO <sub>2</sub> -N	mg/l	<0.01	<0.01	1		0.01
Nitrate Nitrogen	NO <sub>3</sub> -N	mg/l	0.35	0.33	10	10	0.01
Fluoride	F	mg/l	0.1	1.0	4		0.1
pH			8.18	7.52	6.5-8.5	6.5-8.5	
Specific Conductance @ 25 °C.		micromhos	212	218			
Temperature in °C.			22.5	22			

Legend	Notes:
MCL: Maximum Contaminant Level	(1) Turbidity must not exceed 0.3 NTU in 95% of daily samples in any month
Sec.Std: Secondary Standard	(2) EPA Guidance Level
NTU: Nephelometric Turbidity Unit	(3) As Calcium Carbonate
mg/l: Milligram Per Liter	mg/l is equivalent to part per million (ppm)
MDL: Method Detection Limit	(4) By Titration
<: Less than	(5) Tap Water Hardness in Grains per Gallon
EF: Equipment Failure	6.15 GPG
IV: Invalid Sample	

Analyst: Brian Brown

Sr. Analytical Chemist

Initial B. B.

Date: Dec. 22, 2004

Reviewed By: Bahi Habib, P.E. Chemical Engineer

Initial B. H.

Date: Dec. 22, 2004

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